



Region 6  
1445 Ross Avenue  
Dallas, Texas 75202-2733

OS 6379  
UIC Permit No. 06S1261P6379  
Well No.: Rice 2A-9

**AUTHORIZATION TO CONVERT A WELL TO  
AN INJECTION WELL UNDER THE UIC PROGRAM  
OSAGE MINERAL RESERVE**

In compliance with the provisions of the Safe Drinking Water Act, (hereafter referred to as "the Act" or "SDWA") as amended (42 U.S.C. §300f et seq.),

Devon Energy Production Company, L.P.  
333 W. Sheridan Avenue  
Oklahoma City, Oklahoma 73102

is authorized to convert a well to a Class II disposal injection well. This well is located at:

491 feet from the north line and 315 feet from the east line, Northeast Quarter Section 9, Township 23N, Range 03E. Injection will be into the injection interval at a depth of 4363 to 5628 feet below land surface in the Arbuckle in accordance with the construction and operation requirements, injection pressure limits, reporting and monitoring requirements, and other conditions set forth in Parts I and II of this permit and the Osage Class II Underground Injection Control Program and Regulations.

Unless authorization to inject is granted, this permit shall remain in effect for one year from the effective date shown below. Authorization to inject fluids into the well shall be granted only upon compliance with permit conditions, I.A.1., I.A.2., I.A.3., and I.B.1. Authorization to inject fluids into the well may be verbally granted by the Chief, Ground Water/UIC Section or by written "Authorization to Inject" from the Director, Water Quality Protection Division (6WQ). Upon authorization to inject, this permit shall remain in effect until the well is plugged or the permit is terminated.

This permit shall become effective on **JAN 30 2014**

Prepared by

Issued on

**JAN 30 2014**

Arnold Bierschenk  
Environmental Scientist  
Ground Water/UIC Section  
(6WQ-SG)

William K. Honker, P.E.  
Director  
Water Quality Protection  
Division

Part I. SPECIAL PERMIT CONDITIONS

A. Construction Requirements

1. The surface casing shall be set at 556 feet below land surface and set with 318 sacks of cement to surface, and the longstring casing set at 4363 feet below land surface cemented with 440 sacks of cement to 1663 feet.
2. The well shall be equipped with standard female fittings with cut-off valves connected to the tubing and the tubing/casing annulus so that the injection pressure and annulus pressure may be measured by an EPA representative by attaching a gauge having a standard male fitting.
3. Tubing and packer shall be installed. The packer shall be run on the tubing and set inside the casing between 4288 to 4358 feet of depth below the land surface.

B. Operating Requirements

1. Authorization to inject will not be granted until the permittee shows to the satisfaction of the Director, Water Quality Protection Division, pursuant to 40 CFR §147.2920(b)(1)(i) that the well has mechanical integrity. The well's mechanical integrity must be demonstrated prior to the start of injection and at least every five years thereafter. The permittee must notify the Osage UIC office at least five (5) days prior to mechanical integrity testing so that an EPA representative can witness the test..
2. Injection pressure at the wellhead shall not exceed 850 psig.
3. The permittee is authorized to inject salt water for disposal.
4. Injection volume shall be limited to 1,500,000 barrels per month.

# Well Inspection

Scan Code: 30

## Osage Nation / Environmental Protection Agency

P. O. Box 1495  
Pawhuska, OK 74056

Inspector: J. Andrew Yates Dt/Tm Inspected: 1/29/2015 2:00:00 PM Duration: 0.3  
Operator Representative: NONE. Dt Scheduled: \_\_\_\_\_ Dt Op Notified \_\_\_\_\_

### General Well Data and Inspection Information

Operator: Chaparral Energy Inventory No.: OS6267 API Well No. 35-113-02883-00-00  
701 Cedar Lake Blvd. Well Name/No.: \_\_\_\_\_ Swan W1A Status: CO  
OKC, OK 73114 Location: SW 20 24N 4E 1637E - 330N Well Type: SWD  
Phone: (405) 426-4397 Field Nm: \_\_\_\_\_ Lat/Lng: 36.537141, 96.901267 G

### ROUTINE UIC INSPECTION

Purpose: Routine Periodic Responsible Company at Time of Inspection: Chaparral Energy  
Inspect No.: IJAY1503353406 Notification Type: \_\_\_\_\_  
Incident No.: \_\_\_\_\_ Date Letter Sent to Owner: \_\_\_\_\_ Extension Date: \_\_\_\_\_  
Comply No.: \_\_\_\_\_ Date Remedy Required: \_\_\_\_\_ Date Passed: \_\_\_\_\_

### Pressures / Conditions

Date Last MIT: 4/21/2014 Test Result: \_\_\_\_\_ Casing: 5.500 in. Tubing: 2.875 in. USDW: \_\_\_\_\_ ft subsurf

Monitoring Device Elected: \_\_\_\_\_  
Monitoring Device: \_\_\_\_\_  
FLM Canister Pressure: \_\_\_\_\_  
Lease Status: Active  
Barrel Monitor Hooked Up?: \_\_\_\_\_  
Barrel Fluid Level (%): \_\_\_\_\_  
Flowline Hooked Up?: Y  
Injecting?: N

	Tubing	Annulus	
Fittings:	<u>Y</u>	<u>Y</u>	<b>AUTHORIZED</b>
Actual Pressure:	<u>0</u>	<u>0</u>	Max Pressure: _____
How Determined?:	<u>UIC</u>	<u>UIC</u>	Min Req Press: _____
Static Fluid Level:	_____	_____	Max Rate: _____
How Determined?:	_____	_____	
Injection Rate (bpd):	_____	_____	How Rate Determined? _____

### Comments

ACTIVE WELL.

Evaluation: Name: DSA Date: 3.3.15  
Inspection Results: 1 Follow-up: A Reason: See  
Violation Code: None Frequency: no  
Received Date: 2/17/2015



United States Environmental Protection Agency  
Washington, DC 20460

## ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

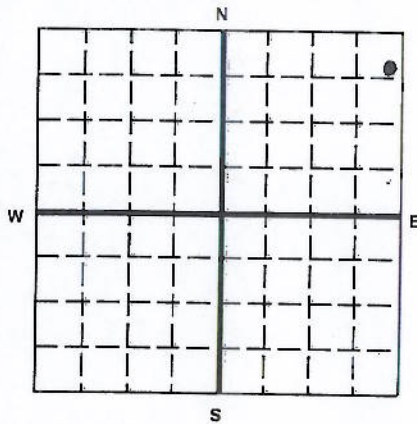
### Name and Address of Existing Permittee

Devon Energy Production Co, LP  
333 W.Sheridan Ave., Oklahoma City, OK 73102

### Name and Address of Surface Owner

Devon Energy Production Co, LP  
333 W.Sheridan Ave., Oklahoma City, OK 73102

### Locate Well and Outline Unit on Section Plat - 640 Acres



State  
OK

County  
Osage

Permit Number  
06S1261P6379

### Surface Location Description

SE 1/4 of NE 1/4 of NE 1/4 of NE 1/4 of Section 9 Township 23N Range 03E

Locate well in two directions from nearest lines of quarter section and drilling unit

### Surface

Location 491 ft. from (N/S) N Line of quarter section  
and 315 ft. from (E/W) E Line of quarter section.

### WELL ACTIVITY

- ☐ Brine Disposal  
☐ Enhanced Recovery  
☐ Hydrocarbon Storage

### TYPE OF PERMIT

- ☐ Individual  
☐ Area

Number of Wells 1

Lease Name: Rice

Well Number 2A-9SWD

### INJECTION PRESSURE

### TOTAL VOLUME INJECTED

### TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)

MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January-2015		.31	312.73	475.81			
February-2015		11.43	311.81	309.27			
March-2015		16.28	312.27	587.25			
April-2015		6.20	312.73	5389.62			
May-2015		-28	312.27	3893.51			
June-2015		.23	312.73	1842.87			
July-2015		-1.65	311.36	3325.60			
August-2015		-1.87	148.35	2590.80			
September-2015		-.75	317.31	2666.60			
October-2015		3.36	319.14	3158.11			
November-2015		3.69	317.77	6218.77			
December-2015		-7.55	18.77	215.88			

### Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Brenda Baker, Sr. Regulatory Specialist

Signature

*Brenda Baker*

Date Signed

02/18/16

*Entered*



Region 6  
1445 Ross Avenue  
Dallas, Texas 75202-2733

056301

UIC Permit No.: 06S1261P6301  
Well No. South Bend 2A-11

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**MODIFICATION TO ENVIRONMENTAL PROTECTION  
AGENCY OSAGE COUNTY UIC PROGRAM**

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Permit No. 06S1261P6301

Dated: January 17, 2012

Permit No. 06S1261P6301 has been revised to read as follows:

In compliance with the provisions of the Safe Drinking Water Act, (hereafter referred to as "the Act" or "SDWA") as amended (42 U.S.C. §300f et seq.),

Devon Energy Production Company, L.P.  
333 W. Sheridan Avenue  
Oklahoma City, OK 73102

is authorized to convert a well to a Class II salt water disposal injection well.

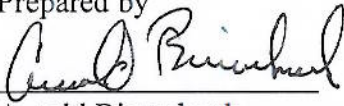
Part I. SPECIAL PERMIT CONDITIONS

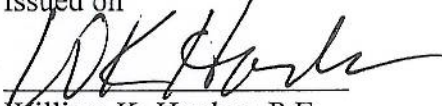
Section B: Operating Requirements

2. Injection pressure at the wellhead shall not exceed 850 psig.
4. Injection volume shall be limited to 1,500,000 barrels per month.

This modification is part of the permit and shall be attached thereto in accordance with 40 CFR Subpart GGG, §147.2927.

This permit modification shall become effective on **JAN 30 2014**

Prepared by  
  
Arnold Bierschenk  
Environmental Scientist  
Ground Water/UIC Section

Issued on  
  
William K. Honker, P.E.  
Director  
Water Quality Protection Division



Region 6  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Scan Code: 17

UIC Permit No. 06S1261P6301  
Well No.: South Bend 2A-11

## AUTHORIZATION TO CONVERT A WELL TO AN INJECTION WELL UNDER THE UIC PROGRAM OSAGE MINERAL RESERVE

In compliance with the provisions of the Safe Drinking Water Act, (hereafter referred to as "the Act" or "SDWA") as amended (42 U.S.C. §300f et seq.),

Nadel and Gussman, L.L.C.  
3200 First Place Tower.  
15 East 5<sup>th</sup> Street, Suite 3200  
Tulsa, OK 74103-4340

is authorized to convert a well to a Class II enhanced oil recovery injection well. This well is located at:

300 feet from the south line and 300 feet from the west line, Southeast Quarter, Section 11, Township 23N, Range 03E into the injection interval at a depth of 4377 to 5272 feet below land surface in the Arbuckle in accordance with the construction and operation requirements, injection pressure limits, reporting and monitoring requirements, and other conditions set forth in Parts I and II of this permit and the Osage Class II Underground Injection Control Program and Regulations.

Unless authorization to inject is granted, this permit shall remain in effect for one year from the effective date shown below. Authorization to inject fluids into the well shall be granted only upon compliance with permit conditions, I.A.1., I.A.2., I.A.3., and I.B.1. Authorization to inject fluids into the well may be verbally granted by the Chief, Ground Water/UIC Section or by written "Authorization to Inject" from the Director, Water Quality Protection Division (6WQ). Upon authorization to inject, this permit shall remain in effect until the well is plugged or the permit is terminated.

This permit shall become effective on

Prepared by

Issued on

*Arnold Bierschenk*

Arnold Bierschenk  
Environmental Scientist  
Ground Water/UIC Section

(6WQ-SG) *AFB*

6WQ-SG: ABierschenk: 10/4/11

6WQ-SG 6WQ-S

DELLINGER DWYER

*Johnny* Miguel I. Flores *Witherick. Howker*  
Division Director  
Water Quality Protection  
Division

06S1261P6301.1f

*DD 10/6/11* *10/17/11*

SPECIAL PERMIT CONDITIONSA. Construction Requirements

1. The surface casing shall be set at 373 feet below land surface, cemented to the surface with 175 sacks of cement, the production casing set at 4377 and cemented with 470 sacks of cement.
2. The well shall be equipped with standard female fittings with cut-off valves connected to the tubing and the tubing/casing annulus so that the injection pressure and annulus pressure may be measured by an EPA representative by attaching a gauge having a standard male fitting.
3. Tubing and packer shall be installed. The packer shall be run on the tubing and set inside the casing between 4302 and 4372 feet of depth below the land surface.

B. Operating Requirements

1. Authorization to inject will not be granted until the permittee shows to the satisfaction of the Director, Water Quality Protection Division, pursuant to 40 CFR §147.2920(b)(1)(i) that the well has mechanical integrity. The well's mechanical integrity must be demonstrated prior to the start of injection and at least every five years thereafter. The permittee must notify the Osage UIC office at least five (5) days prior to mechanical integrity testing so that an EPA representative can witness the test.
2. Injection pressure at the wellhead shall not exceed 50 psig.
3. The permittee is authorized to inject salt water for disposal.
4. Injection volume shall be limited to 480,000 barrels per month.

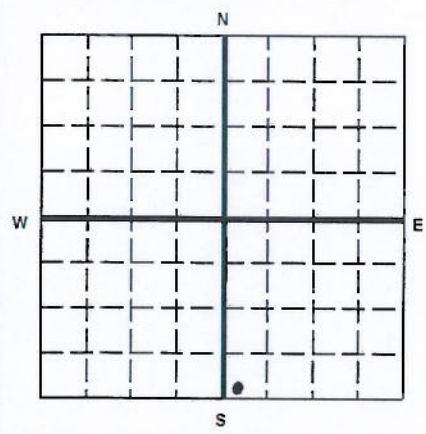
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United States Environmental Protection Agency  
Washington, DC 20460

# ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

<b>Name and Address of Existing Permittee</b> Devon Energy Production Co, LP 333 W.Sheridan Ave., Oklahoma City, OK 73102	<b>Name and Address of Surface Owner</b> Devon Energy Production Co, LP 333 W.Sheridan Ave., Oklahoma City, OK 73102
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<b>Locate Well and Outline Unit on Section Plat - 640 Acres</b> 	<b>State</b> OK	<b>County</b> Osage	<b>Permit Number</b> 06S1261P6301							
	<b>Surface Location Description</b> SW 1/4 of SW 1/4 of SW 1/4 of SE 1/4 of Section 11 Township 23N Range 03E									
	<b>Locate well in two directions from nearest lines of quarter section and drilling unit</b> <b>Surface</b> Location 300 ft. frm (N/S) S Line of quarter section and 300 ft. from (E/W) W Line of quarter section.									
	<table border="0"><tr><td><b>WELL ACTIVITY</b></td><td><b>TYPE OF PERMIT</b></td></tr><tr><td><input type="checkbox"/> Brine Disposal</td><td><input type="checkbox"/> Individual</td></tr><tr><td><input type="checkbox"/> Enhanced Recovery</td><td><input type="checkbox"/> Area</td></tr><tr><td><input type="checkbox"/> Hydrocarbon Storage</td><td>Number of Wells 1</td></tr></table> <b>Lease Name</b> Southbend <b>Well Number</b> 2A-11SWD			<b>WELL ACTIVITY</b>	<b>TYPE OF PERMIT</b>	<input type="checkbox"/> Brine Disposal	<input type="checkbox"/> Individual	<input type="checkbox"/> Enhanced Recovery	<input type="checkbox"/> Area	<input type="checkbox"/> Hydrocarbon Storage
<b>WELL ACTIVITY</b>	<b>TYPE OF PERMIT</b>									
<input type="checkbox"/> Brine Disposal	<input type="checkbox"/> Individual									
<input type="checkbox"/> Enhanced Recovery	<input type="checkbox"/> Area									
<input type="checkbox"/> Hydrocarbon Storage	Number of Wells 1									

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January-2015		-2.62	309.52	225.58			
February-2015		222.59	1500.00	397.68			
March-2015		139.11	1500.00	639.76			
April-2015		33.89	326.01	1668.30			
May-2015		35.72	331.50	1622.30			
June-2015		34.92	326.47	3559.79			
July-2015		3.04	320.51	1090.49			
August-2015		36.55	325.09	1253.55			
September-2015		34.05	325.55	2282.20			
October-2015		24.07	327.84	1640.01			
November-2015		17.27	327.38	0.00			
December-2015		18.51	322.34	176.70			

## Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

<b>Name and Official Title (Please type or print)</b> Brenda Baker, Sr. Regulatory Specialist	<b>Signature</b> 	<b>Date Signed</b> 02/18/16
--	--	--------------------------------

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

Received  
SEP 09 2014

6EN-W

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**Annual Disposal / Injection Well  
Monitoring Report**

Operator: CHAPARRAL ENERGY, L.L.C.  
701 CEDAR LAKE BOULEVARD  
OKLAHOMA CITY, OK 73114

Owner: CHAPARRAL ENERGY, L.L.C.  
701 CEDAR LAKE BOULEVARD  
OKLAHOMA CITY, OK 73114

State: OK County: OSAGE Inventory Number: OS6267000  
Quarter Section: SW Section: 20 Township: 24N Range: 04E  
Surface Location: 330N/1637E

<u>Well Activity</u>	<u>Type of Permit</u>	<u>Lease Name</u>	<u>Well Number</u>
Brine Disposal/ Enhanced Oil Recovery No. of Wells: <u>1</u>	X Individual Area	Swan	W1A

Mth/Yr	INJECTION PRESSURE		INJECTION VOLUME INJECTED		TUBING/CASING ANNULUS PRESSURE OPTIONAL MONITOR	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul-13	300	300	44,186			
Aug-13	300	300	31,610			
Sep-14	300	300	32,003			
Oct-13	300	300	33,860			
Nov-13	300	300	29,789			
Dec-13	300	300	27,506			
Jan-14	300	300	27,496			
Feb-14	300	300	27,204			
Mar-14	300	300	10,978			
Apr-14	300	300	0			
May-14	300	300	35,577			
Jun-14	300	300	77,856			

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 C.F.R. §122.22).

Name and Official Title	Signature	Date Signed
Lindsay Reames Engineering Tech II	<i>Lindsay Reames</i>	30-Jul-14

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Operator: NADEL AND GUSSMAN  
15 E. 5th St., Suite 3200  
Tulsa, Oklahoma 74103

OWNER: SPYGLASS ENERGY GROUP LLC  
15 E. 5th St., Suite 3400  
Tulsa, Oklahoma 74103

State: OK County: OSAGE  
Qtr. Section: SE Section: 17

Township: 25N

Range: 06E

Inventory No.: OS6158000  
Surface Loc.: 0660S/1980E

Well Activity Type of Permit Lease Name Well Number  
Enhanced Recovery X Individual MODICA 1A-17  
No. of Wells:               Area

		Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
Month	Year	Avg. PSIG	Max. PSIG	BBL	MCF	Min. PSIG	Max. PSIG
Jul	2015	VAC	VAC	201799			
Aug	2015	VAC	VAC	223350			
Sep	2015	VAC	VAC	218799			
Oct	2015	VAC	VAC	219716			
Nov	2015	VAC	VAC	190941			
Dec	2015	VAC	VAC	236144			
Jan	2016	VAC	VAC	167806			
Feb	2016	VAC	VAC	180589			
Mar	2016	VAC	VAC	174586			
Apr	2016	VAC	VAC	179621			
May	2016	VAC	VAC	190458			
Jun	2016	VAC	VAC	179200			

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

Name and Official Title

Wayne Porter, Field Engineer

Signature

Wayne Porter

Date Signed

August 11, 2016

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: CEJA CORPORATION  
1437 SOUTH BOULDER, SUITE 1250  
TULSA OK 74119

Owner: CEJA CORPORATION  
1437 SOUTH BOULDER, SUITE 1250  
TULSA OK 74119

State: OK County: OSAGE

Inventory Number: OS6078000

Qtr Section: SE Section: 03 Township: 25N Range: 04E Surface Location: 440S/330W

Well Activity

Disposal

No. of Wells: \_\_\_\_\_

Type of Permit

☐ Individual

☐ Area

Lease Name

*Elman 1-A*

Well Number

1-A

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul 2015	0		20544			
Aug 2015	0		20177			
Sep 2015	0		21075			
Oct 2015	0		18972			
Nov 2015	0		19883			
Dec 2015	0		20193			
Jan 2016	0		20033			
Feb 2016	0		19104			
Mar 2016	150		17751			
Apr 2016	150		18290			
May 2016	150		21562			
Jun 2016	150		15708			

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

Name and Official Title:

*Cindy Johnson —  
Exploration Tech.*

Signature:

*C. Johnson*

Date Signed:

*7-6-16*

*Entered*

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: JONES AND BUCK DEV CO  
P O BOX 68  
SEDAN KS 67361

Owner: JONES AND BUCK DEV CO  
P O BOX 68  
SEDAN KS 67361

State: OK County: OSAGE

Inventory Number: OS6196000

Qtr Section: SW Section: 05 Township: 24N Range: 05E Surface Location: 1005S/1650W

Well Activity

Disposal

No. of Wells: \_\_\_\_\_

Type of Permit

☐ Individual

☐ Area

Lease Name

Stith

Well Number

1-S

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul 2015	Vac		69000		0	
Aug 2015	Vac		69000		0	
Sep 2015	Vac		66000		0	
Oct 2015	Vac		69000		0	
Nov 2015	Vac		66000		0	
Dec 2015	Vac		69000		0	
Jan 2016	Vac		69000		0	
Feb 2016	Vac		65000		0	
Mar 2016	Vac		69000		0	
Apr 2016	Vac		66000		0	
May 2016	Vac		69000		0	
Jun 2016	Vac		66000		0	

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

Name and Official Title:

Tim Doty--Bookkeeper

Signature:

*Tim Doty*

Date Signed:

July 26, 2016

*Entered*

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: SULLIVAN ~~OSAGE~~ LLC AND COMPANY  
1437 SOUTH BOULDER, SUITE ~~1200~~ 700  
TULSA OK 741193636

Owner: SULLIVAN ~~OSAGE~~ LLC AND COMPANY  
1437 SOUTH BOULDER, SUITE ~~1200~~ 700  
TULSA OK 741193636

State: OK County: OSAGE

Inventory Number: 05 6420000

Qtr Section: SE Section: 36 Township: 25N Range: 4E Surface Location: 228FSL/842FEL

Well Activity Type of Permit Lease Name Well Number  
Brine Disposal ☒ Individual ☐ Area Cougar #1D-36  
No. of Wells: 1

2015 Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jan 2015	-2	Vacuum	116,610			
Feb 2015	-2	Vacuum	1,001			
Mar 2015	-2	Vacuum	1,169			
Apr 2015	-2	Vacuum	940			
May 2015	-2	Vacuum	822			
Jun 2015	-2	Vacuum	861			
Jul 2015	-2	Vacuum	1,079			
Aug 2015	-2	Vacuum	1,205			
Sep 2015	-2	Vacuum	1,078			
Oct 2015	-2	Vacuum	1,104			
Nov 2015	-2	Vacuum	1,226			
Dec 2015	-2	Vacuum	1,114			

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

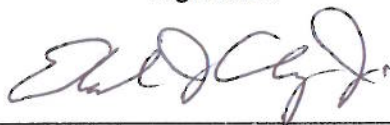
TOTAL: 128,809 BW

Name and Official Title:

Signature:

Date Signed:

Edward J. Chesny, Jr.  
Consulting Engineer



1/26/16

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Operator: NADEL AND GUSSMAN  
15 E. 5th St., Suite 3200  
Tulsa, Oklahoma 74103

OWNER: SPYGLASS ENERGY GROUP LLC  
15 E. 5th St., Suite 3400  
Tulsa, Oklahoma 74103

State: OK County: OSAGE  
Qtr. Section: SE Section: 12

Township: 25N Range: 05E

Inventory No.: OS6228000  
Surface Loc.: 0990S/0990W

Well Activity Type of Permit Lease Name Well Number  
Enhanced Recovery X Individual KELLY 1A  
No. of Wells:               Area

		Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
Month	Year	Avg. PSIG	Max. PSIG	BBL	MCF	Min. PSIG	Max. PSIG
Jul	2015	VAC	VAC	10643			
Aug	2015	VAC	VAC	10214			
Sep	2015	VAC	VAC	9856			
Oct	2015	VAC	VAC	10007			
Nov	2015	VAC	VAC	9881			
Dec	2015	VAC	VAC	9338			
Jan	2016	VAC	VAC	9901			
Feb	2016	VAC	VAC	7232			
Mar	2016	VAC	VAC	9641			
Apr	2016	VAC	VAC	10502			
May	2016	VAC	VAC	11029			
Jun	2016	VAC	VAC	9364			

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22)

Name and Official Title

Wayne Porter, Field Engineer

Signature

Wayne Porter

Date Signed

August 11, 2016

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: SCOUT ENERGY MANAGEMENT, INC>  
13403 NORTHWEST FREEWAY  
HOUSTON TX 77040

Owner: SCOUT ENERGY MANAGEMENT LLC  
4901 LBJ FREEWAY, SUITE 300  
DALLAS TX 752446107

State: OK County: OSAGE

Inventory Number: OS6170000

Qtr Section: SE Section: 32 Township: 25N Range: 06E Surface Location: 850S/2000E

Well Activity

Disposal

No. of Wells: 10

Type of Permit

☐ Individual

☐ Area

Lease Name

Wilson

Well Number

15-32

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul 2015	-30	-30	92,002			
Aug 2015	-30	-30	68,708			
Sep 2015	-29	-26	64,128			
Oct 2015	-30	-30	74,566			
Nov 2015	-30	-30	56,140			
Dec 2015	-30	-30	30,299			
Jan 2016	-30	-30	19,724			
Feb 2016	-29	-3	34,865			
Mar 2016	-30	-27	12,578			
Apr 2016	-30	-30	10,464			
May 2016	-30	-30	27,071			
Jun 2016	-30	-30	19,405			

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

Name and Official Title:

Signature:

Date Signed:

Kim Brand, Sr. Regulatory Specialist

*Kim Brand*

7/25/2016

*Entered*

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: SCOUT ENERGY MANAGEMENT LLC  
4901 LBJ FREEWAY, SUITE 300  
DALLAS TX 752446107

Owner: SCOUT ENERGY MANAGEMENT LLC  
4901 LBJ FREEWAY, SUITE 300  
DALLAS TX 752446107

State: OK County: OSAGE

Inventory Number: OS6063000

Qtr Section: NE Section: 09

Township: 24N

Range: 06E

Surface Location: 67N/1941E

Well Activity

Disposal

No. of Wells: 7

Type of Permit

☐ Individual

☐ Area

Lease Name

Farmland

Well Number

6-9

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul 2015	-4	0	208,936			
Aug 2015	-28	-25	239,375			
Sep 2015	-28	-28	248,091			
Oct 2015	-28	-28	231,761			
Nov 2015	-28	-28	208,135			
Dec 2015	-28	-28	189,488			
Jan 2016	-28	-28	175,375			
Feb 2016	-28	-20	347,361			
Mar 2016	-28	-28	180,794			
Apr 2016	-28	-28	165,729			
May 2016	-27	0	137,705			
Jun 2016	-28	-28	117,408			

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22)

Name and Official Title:

Signature:

Date Signed:

Kim Brand, Sr. Regulatory Specialist

Kim Brand

7/25/2016

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: SCOUT ENERGY MANAGEMENT LLC  
4901 LBJ FREEWAY, SUITE 300  
DALLAS TX 752446107

Owner: SCOUT ENERGY MANAGEMENT LLC  
4901 LBJ FREEWAY, SUITE 300  
DALLAS TX 752446107

State: OK County: OSAGE

Inventory Number: OS6009000

Qtr Section: NW Section: 22 Township: 24N Range: 06E

Surface Location: 320S/154W

Well Activity

Type of Permit

Lease Name

Well Number

Disposal

☐ Individual

7D

No. of Wells: 9

☐ Area

Williams

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul 2015	-2	0	40,104			
Aug 2015	0	0	38,563			
Sep 2015	0	0	32,208			
Oct 2015	-3	0	33,136			
Nov 2015	-4	0	30,244			
Dec 2015	-14	0	31,014			
Jan 2016	-15	0	37,193			
Feb 2016	-19	-10	66,955			
Mar 2016	-18	-4	28,208			
Apr 2016	-16	-4	31,803			
May 2016	-19	-5	29,636			
Jun 2016	-12	0	31,964			

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

Name and Official Title:

Signature:

Date Signed:

Kim Brand, Sr. Regulatory Specialist

*Kim Brand*

7/25/2016

*Ente*

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal Injection Well Monitoring Report

<b>Operator:</b> GLENN SUPPLY COMPANY INC PO BOX 1104 TULSA OK 74101	<b>Owner:</b> GLENN SUPPLY COMPANY INC PO BOX 1104 TULSA OK 74101
--	---

**State:** OK **County:** OSAGE **Inventory Number:** OS6094000  
**Qtr Section:** NW **Section:** 17 **Township:** 25N **Range:** 04E **Surface Location:** 350N/960E

<b>Well Activity</b> Disposal No. of Wells: 1	<b>Type of Permit</b> <input checked="" type="checkbox"/> Individual <input type="checkbox"/> Area	<b>Lease Name</b> MOURSAND SWD 17-A1	<b>Well Number</b> 17-A1
---	--	---	-----------------------------

Month / Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure		
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG	
Jul 2014	0	50	55,225				
Aug 2014	0	50	57,190				
Sep 2014	0	50	35,895				
Oct 2014	0	50	27,230				
Nov 2014	0	50	28,530				
Dec 2014	0	50	26,780				
Jan 2015	0	50	27,230				
Feb 2015	0	50	18,130				
Mar 2015	0	50	5,625				
Apr 2015	0	50	59,245				
May 2015	0	50	39,124				
Jun 2015	0	50	58,745				

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations (Ref. 40 CFR 122.22)

**Name and Official Title:** Andrew B Seigel, President **Signature:**  **Date Signed:** 07/14/2015

Entered

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

05 0052

**Annual Disposal / Injection Well  
Monitoring Report**

MIT FAIL 5.25.12

Operator: CHAPARRAL ENERGY, L.L.C. 701 CEDAR LAKE BOULEVARD OKLAHOMA CITY, OK 73114	Owner: CHAPARRAL ENERGY, L.L.C. 701 CEDAR LAKE BOULEVARD OKLAHOMA CITY, OK 73114
---	--

State: OK County: OSAGE Inventory Number: **OS0052001**  
Quarter Section: NW Section: 29 Township: 24N Range: 04E  
Surface Location: 330S/330E

Well Activity      Type of Permit      Lease Name      Well Number

Brine Disposal/  
Enhanced Oil Recovery  
No. of Wells: 1

X Individual  
Area

1148

KEWANEE

Mth/Yr	INJECTION PRESSURE		INJECTION VOLUME INJECTED		TUBING/CASING ANNULUS PRESSURE OPTIONAL MONITOR	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul-13			46,807			
Aug-13			31,419			
Sep-13			24,168			
Oct-13			25,204			
Nov-13			39,311			
Dec-13			56,950			
Jan-14			20,057			
Feb-14			31,425			
Mar-14			9,673			
Apr-14			5,282			
May-14			75,550			
Jun-14			76,140			

**CERTIFICATION**

attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the

Name and Official Title

Signature

Date Signed

LISON HOLMAN  
ENGINEERING TECH

4/27/2015

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

Operator: DEVON ENERGY PRODUCTION...  
333 WEST SHERIDAN  
OKLAHOMA CITY OK 73102

Owner: NADEL AND GUSSMAN OPERATING CO,...  
15 EAST 5TH STREET, SUITE 3200  
TULSA OS 74103

State: OK County: OSAGE

Inventory Number: OS6301000

Qtr Section: SE Section: 11 Township: 23N Range: 03E Surface Location: 300S/300W

Well Activity

Disposal

No. of Wells: 1

Type of Permit

☒ Individual

☐ Area

Lease Name

Southbend 2A-11 SWD

Well Number

2A-11

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jan 2015	18	199	60,134		2	5
Feb 2015	234	242	95,939		1	1.6
Mar 2015	242	247	90,467		1.4	3.0
Apr 2015	242	257	58,928		.7	.7
May 2015	248	260	90,115		.7	.7
Jun 2015	252	258	82,419		.7	.7
Jul 2015	130	248	52,905		.7	.7
Aug 2015	260	270	50,170		.7	.7
Sep 2015	269	274	52,869		.7	.7
Oct 2015	200	277	50,861		0	0
Nov 2015	313	318	50,847		0	0
Dec 2015	300	316	55,179		0	0

**CERTIFICATION**

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Name and Official Title:

Joe Grossman  
Environmental Supervisor

Signature:



Date Signed:

2/5/16

Entered



United States Environmental Protection Agency  
Washington, DC 20460

## ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

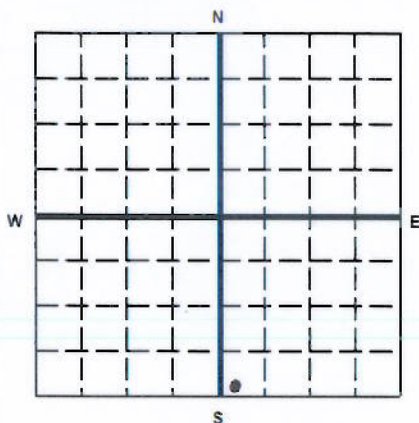
### Name and Address of Existing Permittee

Devon Energy Production Co, LP  
333 W.Sheridan Ave., Oklahoma City, OK 73102

### Name and Address of Surface Owner

Devon Energy Production Co, LP  
333 W.Sheridan Ave., Oklahoma City, OK 73102

### Locate Well and Outline Unit on Section Plat - 640 Acres



### State

OK

### County

Osage

### Permit Number

06S1261P6301

### Surface Location Description

SW 1/4 of SW 1/4 of SW 1/4 of SE 1/4 of Section 11 Township 23N Range 03E

Locate well in two directions from nearest lines of quarter section and drilling unit

### Surface

Location 300 ft. from (N/S) S Line of quarter section  
and 300 ft. from (E/W) W Line of quarter section.

### WELL ACTIVITY

- ☐ Brine Disposal  
☐ Enhanced Recovery  
☐ Hydrocarbon Storage

### TYPE OF PERMIT

- ☐ Individual  
☐ Area

Number of Wells 1

Lease Name Southbend

Well Number 2A-11SWD

### INJECTION PRESSURE

### TOTAL VOLUME INJECTED

### TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)

MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January-2015		-2.62	309.52	225.58			
February-2015		222.59	1500.00	397.68			
March-2015		139.11	1500.00	639.76			
April-2015		33.89	326.01	1668.30			
May-2015		35.72	331.50	1622.30			
June-2015		34.92	326.47	3559.79			
July-2015		3.04	320.51	1090.49			
August-2015		36.55	325.09	1253.55			
September-2015		34.05	325.55	2282.20			
October-2015		24.07	327.84	1640.01			
November-2015		17.27	327.38	0.00			
December-2015		18.51	322.34	176.70			

### Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

### Name and Official Title (Please type or print)

Brenda Baker, Sr. Regulatory Specialist

### Signature

*Brenda Baker*

### Date Signed

02/18/16

*Entered*


 United States Environmental Protection Agency  
 Washington, DC 20460

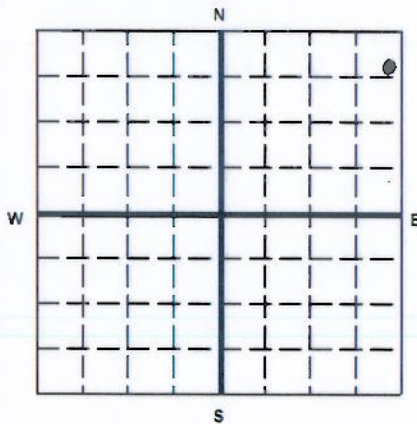
# ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

**Name and Address of Existing Permittee**

 Devon Energy Production Co, LP  
 333 W.Sheridan Ave., Oklahoma City, OK 73102

**Name and Address of Surface Owner**

 Devon Energy Production Co, LP  
 333 W.Sheridan Ave., Oklahoma City, OK 73102

**Locate Well and Outline Unit on  
Section Plat - 640 Acres**

**State**

OK

**County**

Osage

**Permit Number**

06S1261P6379

**Surface Location Description**

SE 1/4 of NE 1/4 of NE 1/4 of NE 1/4 of Section 9 Township 23N Range 03E

Locate well in two directions from nearest lines of quarter section and drilling unit

**Surface**

 Location 491 ft. from (N/S) N Line of quarter section  
 and 315 ft. from (E/W) E Line of quarter section.

**WELL ACTIVITY**

- ☐ Brine Disposal  
☐ Enhanced Recovery  
☐ Hydrocarbon Storage

**TYPE OF PERMIT**

- ☐ Individual  
☐ Area

Number of Wells 1

Lease Name Rice

Well Number 2A-9SWD

**INJECTION PRESSURE**
**TOTAL VOLUME INJECTED**
**TUBING -- CASING ANNULUS PRESSURE  
(OPTIONAL MONITORING)**

MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January-2015		.31	312.73	475.81			
February-2015		11.43	311.81	309.27			
March-2015		16.28	312.27	587.25			
April-2015		6.20	312.73	5389.62			
May-2015		-.28	312.27	3893.51			
June-2015		.23	312.73	1842.87			
July-2015		-1.65	311.36	3325.60			
August-2015		-1.87	148.35	2590.80			
September-2015		-.75	317.31	2666.60			
October-2015		3.36	319.14	3158.11			
November-2015		3.69	317.77	6218.77			
December-2015		-7.55	18.77	215.88			

**Certification**

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Brenda Baker, Sr. Regulatory Specialist

Signature

Date Signed

02/18/16

United States Environmental Protection Agency  
Underground Injection Control Program  
1445 Ross Avenue  
Dallas, TX 75202-2733

29

Annual Disposal/Injection Well Monitoring Report

665

Operator: JOHN P. LONG, JR.  
2200 LYNN ROAD  
PAWHUSKA OK 74056

Owner: JOHN P LONG, JR.  
PO BOX 968  
PAWHUSKA OK 74056

State: OK County: OSAGE

Inventory Number: OS4464000

Qtr Section: NW Section: 15

Township: 24N

Range: 06E

Surface Location: 330N/330W

Well Activity

Disposal

No. of Wells: 1

Type of Permit

☒ Individual

☐ Area

Lease Name

LACY

Well Number

4-B

Month/Year	Injection Pressure		Total Volume Injected		Tubing-Casing Annulus Pressure (Optional Monitor)	
	Avg PSIG	Max PSIG	BBL	MCF	Min PSIG	Max PSIG
Jul 2015	VAC Ø		9000			
Aug 2015	11		9000			
Sep 2015	11		9000			
Oct 2015						
Nov 2015						
Dec 2015						
Jan 2016						
Feb 2016						
Mar 2016						
Apr 2016						
May 2016						
Jun 2016						

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. (Ref. 40 CFR 122.22).

Name and Official Title:

John Long  
Owner

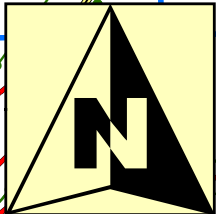
Signature:

John Long

Date Signed:

Sept 30, 15

Entered



### EQ Last 7 Days Faults Subject Wells

▲ PawneeActionWells09-03-2016  
past7days  
prefmag

- 0.200000 - 1.000000
- 1.000001 - 2.000000
- 2.000001 - 3.000000
- 3.000001 - 3.500000
- 3.500001 - 3.999999
- 4.000000 - 4.500000
- 4.500001 - 5.610000

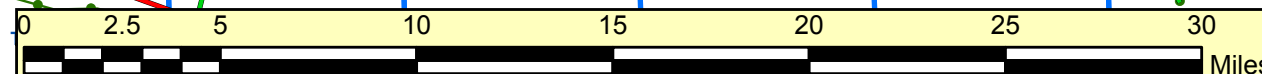
□ Pawnee10mile5.6

### Faults OF4-2015\_WGS84

<all other values>

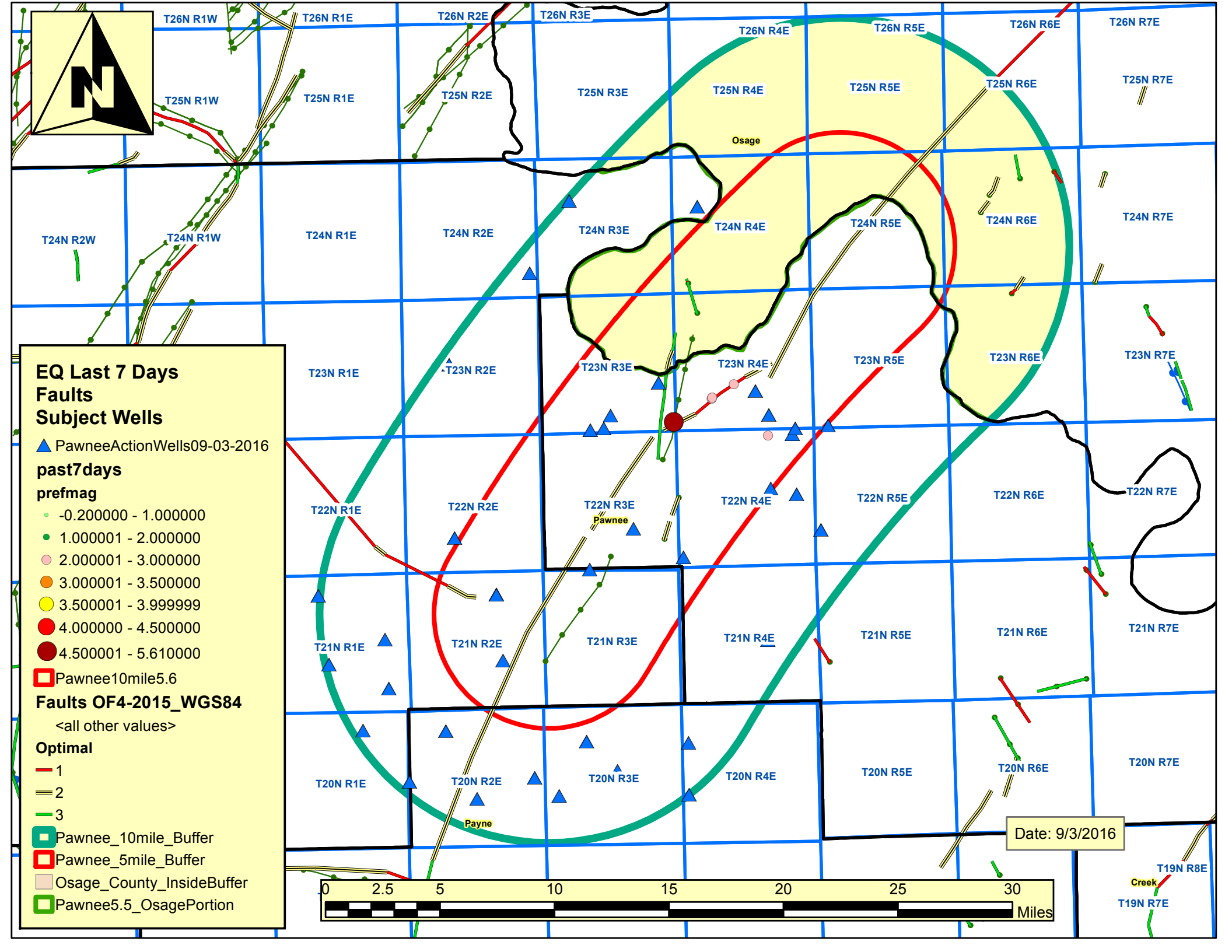
#### Optimal

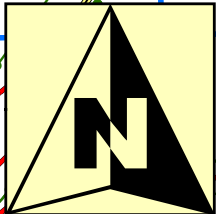
- 1
- 2
- 3
- Pawnee\_10mile\_Buffer
- Pawnee\_5mile\_Buffer
- Osage\_County\_InsideBuffer
- Pawnee5.5\_OsagePortion



Date: 9/3/2016

Creek  
T19N R8E  
T19N R7E





### EQ Last 7 Days Faults Subject Wells

▲ PawneeActionWells09-03-2016  
past7days  
prefmag

- 0.200000 - 1.000000
- 1.000001 - 2.000000
- 2.000001 - 3.000000
- 3.000001 - 3.500000
- 3.500001 - 3.999999
- 4.000000 - 4.500000
- 4.500001 - 5.610000

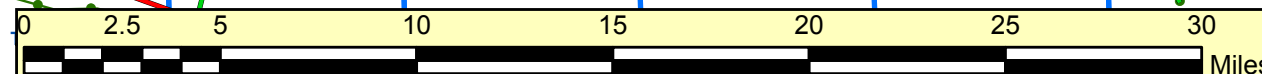
□ Pawnee10mile5.6

### Faults OF4-2015\_WGS84

<all other values>

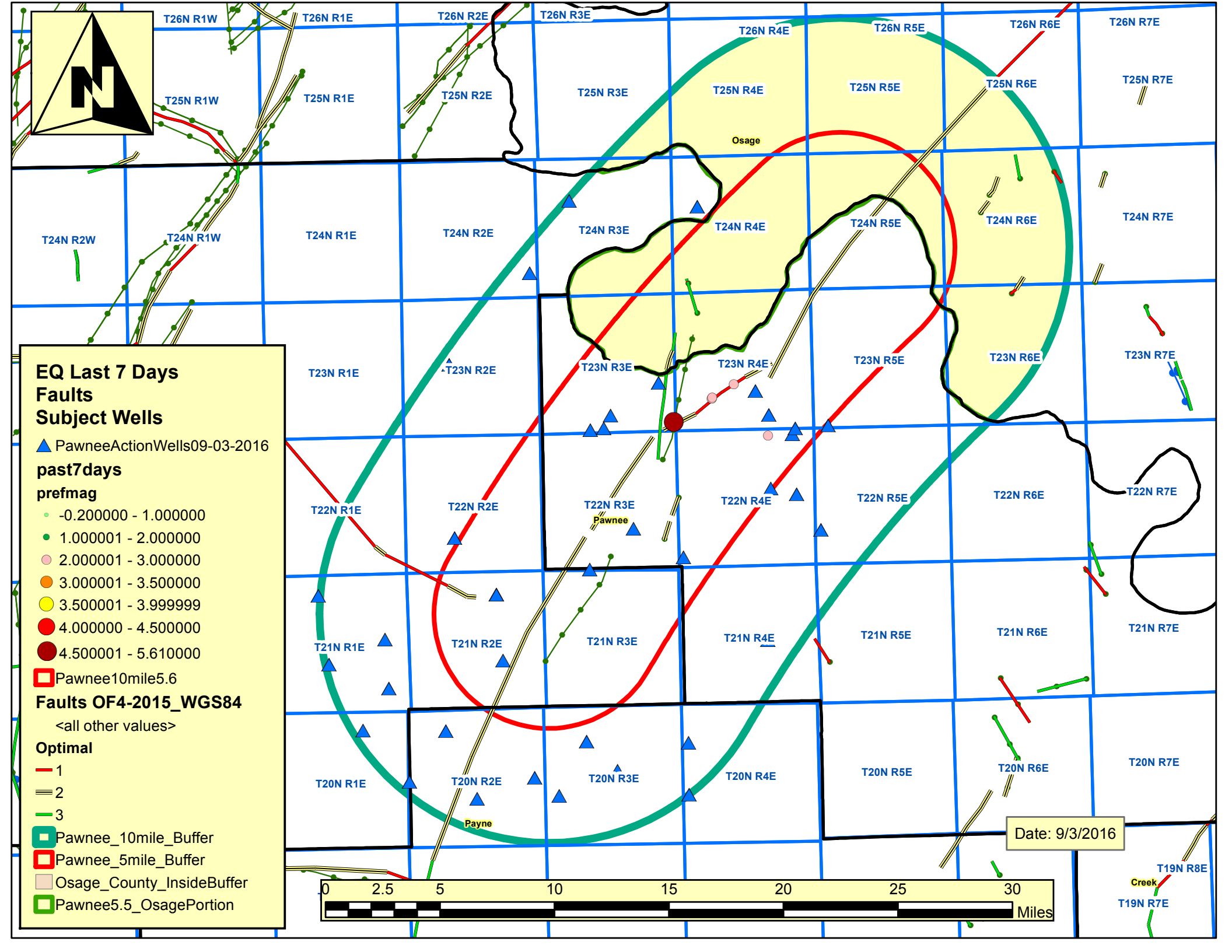
#### Optimal

- 1
- 2
- 3
- Pawnee\_10mile\_Buffer
- Pawnee\_5mile\_Buffer
- Osage\_County\_InsideBuffer
- Pawnee5.5\_OsagePortion



Date: 9/3/2016

Creek  
T19N R8E  
T19N R7E



INVENTORY_	WELLID	Buffer	QUARTER	SECTION	TOWNSHIP	RANGE	USDW_DEPTH	LATITUDE	LONGITUDE	UICDI_FORM
OS0052000	1	5 mi	NW		29 24N	04E	290	36.52996900000	-96.89893100000	ARBUCKLE
OS6196000	1-S	5 mi	SW		5 24N	05E	240	36.58205400000	-96.79425000000	ARBUCKLE
OS6267000	W1A	5 mi	SW		20 24N	04E	170	36.53715000000	-96.90128500000	ARBUCKLE
OS6301000	2A-11	5 mi	SE		11 23N	03E	319	36.47884000000	-96.95096100000	ARBUCKLE
OS6379000	2A-9	5 mi	NE		9 23N	03E	200	36.66480420940	-96.97851770860	ARBUCKLE
OS6420000	1D-36	5 mi	SE		36 25N	04E	250	36.59450895920	-96.81916027910	ARBUCKLE
OS6430000	1-D	5 mi	NE		9 23N	04E	150	36.48671476280	-96.88714311440	ARBUCKLE
OS4464000	4-B	10 mi	NW		15 24N	06E	506	36.56425400000	-96.64942000000	ARBUCKLE
OS6009000	7D	10 mi	NW		22 24N	06E	400	36.54425300000	-96.65670200000	ARBUCKLE
OS6056000	2-17	10 mi	NE		17 24N	06E	395	36.56443500000	-96.67980400000	ARBUCKLE
OS6063000	6-9	10 mi	NE		9 24N	06E	395	36.57906600000	-96.66402400000	ARBUCKLE
OS6078000	1-A	10 mi	SE		3 25N	04E	530	36.66771200000	-96.85985100000	ARBUCKLE
OS6094000	17-A1	10 mi	NW		17 25N	04E	220	36.65092500000	-96.90007600000	ARBUCKLE
OS6158000	1A-17	10 mi	SE		17 25N	06E	0	36.63879500000	-96.68029000000	ARBUCKLE
OS6170000	15-32	10 mi	SE		32 25N	06E	306	36.59607400000	-96.67988100000	ARBUCKLE
OS6228000	1A	10 mi	SE		12 25N	05E	197	36.65493400000	-96.71364100000	ARBUCKLE

DEPTH_TOP	DEPTH_BOTT	COMPANY	INJ_VOLUM	INJ_V	INJ_PRE: COMMERCIAL	Annual Report	Last MIT	MIT Pass/Fail	Last Inspection
4195	4267	CHAPARRAL ENERGY, LLC	0	1	1148	0	4/27/2015	5/25/2015 Pass	8/27/2015
3705	4848	JONES AND BUCK DEV CO	150000	1	0	0	7/26/2016	9/5/2014 Pass	9/5/2014
4146	5125	CHAPARRAL ENERGY, LLC	150000	1	320	0	7/30/2014	5/5/2016 Pass	5/5/2016
4377	5272	Devon	1500000	1	850	0	2/18/2016	6/13/2013 Pass	5/6/2016
4363	5628	Devon	1500000	1	850	0	2/18/2016	1/29/2014 Pass	5/23/2016
3802	4836	SULLIVAN OSAGE LLC lisa@sullco.com	900000	1	100	0	8/18/2016	8/7/2013 Pass	2/6/2015
4012	4846	HORN OIL COMPANY	90000	1	100	0		12/27/2013 Pass	10/28/2015
3295	3802	JOHN P LONG, JR.	0	1	901	0	9/30/2016	8/15/2016 Fail	8/15/2016
3260	4450	SCOUT ENERGY MANAGEMENT LLC	450000	1	150	0	7/25/2016	10/2/2015 Pass	10/2/2015
3300	4810	SCOUT ENERGY MANAGEMENT LLC	750000	1	200	0	7/25/2016	6/22/2016 Pass	6/22/2016
3405	4645	SCOUT ENERGY MANAGEMENT LLC	1050000	1	200	0	7/25/2016	5/5/2016 Pass	5/4/2016
3713	3734	CEJA CORPORATION	60000	1	0	0	7/6/2016	7/15/2016 Pass	7/15/2016
4421	5049	GLENN SUPPLY COMPANY INC	66000	1	200	0	7/14/2015	3/12/2012 Pass	3/3/2015
3416	4550	Nadel and Gussman	450000	1	200	0	8/11/2016	1/8/2015 Pass	7/26/2016
3381	4592	SCOUT ENERGY MANAGEMENT LLC	1800000	0	200	0	7/25/2016	11/20/2014 Pass	11/21/2014
3448	4195	NADEL AND GUSSMAN OPERATING CO, LLC	240000	1	0	0	8/11/2016	2/10/2016 Pass	2/10/2016

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Inventory # OS3732000  
NW Sec 12-21N-07E  
Osage County, Oklahoma  
Little Bear  
Well Number F-1

Operator: Becca Oil LLC  
918-225-2334

	Avg PSIG	Max PSIG	Volume Inj
1/1/2016 vac		100	170
1/2/2016 vac		100	155
1/3/2016 vac		100	164
1/4/2016 vac		100	173
1/5/2016 vac		100	165
1/6/2016 vac		100	170
1/7/2016 vac		100	164
1/8/2016 vac		100	170
1/9/2016 vac		100	163
1/10/2016 vac		100	170
1/11/2016 vac		100	165
1/12/2016 vac		100	165
1/13/2016 vac		100	215
1/14/2016 vac		100	133
1/15/2016 vac		100	165
1/16/2016 vac		100	170
1/17/2016 vac		100	175
1/18/2016 vac		100	164
1/19/2016 vac		100	130
1/20/2016 vac		100	155
1/21/2016 vac		100	161
1/22/2016 vac		100	180
1/23/2016 vac		100	154
1/24/2016 vac		100	171
1/25/2016 vac		100	165
1/26/2016 vac		100	170
1/27/2016 vac		100	164
1/28/2016 vac		100	170
1/29/2016 vac		100	179
1/30/2016 vac		100	164
1/31/2016 vac		100	155
2/1/2016 vac		100	160
2/2/2016 vac		100	175
2/3/2016 vac		100	144
2/4/2016 vac		100	155
2/5/2016 vac		100	171
2/6/2016 vac		100	138
2/7/2016 vac		100	154
2/8/2016 vac		100	137
2/9/2016 vac		100	155

2/10/2016 vac	100	130
2/11/2016 vac	100	40
2/12/2016 vac	100	191
2/13/2016 vac	100	155
2/14/2016 vac	100	170
2/15/2016 vac	100	132
2/16/2016 vac	100	154
2/17/2016 vac	100	170
2/18/2016 vac	100	171
2/19/2016 vac	100	33
2/20/2016 vac	100	55
2/21/2016 vac	100	228
2/22/2016 vac	100	214
2/23/2016 vac	100	160
2/24/2016 vac	100	135
2/25/2016 vac	100	154
2/26/2016 vac	100	137
2/27/2016 vac	100	144
2/28/2016 vac	100	155
2/29/2016 vac	100	17
3/1/2016 vac	100	111
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3/8/2016 vac	100	160
3/9/2016 vac	100	171
3/10/2016 vac	100	70
3/11/2016 vac	100	154
3/12/2016 vac	100	139
3/13/2016 vac	100	158
3/14/2016 vac	100	133
3/15/2016 vac	100	140
3/16/2016 vac	100	161
3/17/2016 vac	100	173
3/18/2016 vac	100	148
3/19/2016 vac	100	160
3/20/2016 vac	100	171
3/21/2016 vac	100	165
3/22/2016 vac	100	144
3/23/2016 vac	100	171
3/24/2016 vac	100	160
3/25/2016 vac	100	144
3/26/2016 vac	100	155
3/27/2016 vac	100	137

3/28/2016 vac	100	180
3/29/2016 vac	100	144
3/30/2016 vac	100	139
3/31/2016 vac	100	171
4/1/2016 vac	100	55
4/2/2016 vac	100	210
4/3/2016 vac	100	170
4/4/2016 vac	100	164
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4/23/2016 vac	100	155
4/24/2016 vac	100	132
4/25/2016 vac	100	171
4/26/2016 vac	100	165
4/27/2016 vac	100	170
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4/29/2016 vac	100	155
4/30/2016 vac	100	165
5/1/2016 vac	100	163
5/2/2016 vac	100	171
5/3/2016 vac	100	154
5/4/2016 vac	100	165
5/5/2016 vac	100	170
5/6/2016 vac	100	0
5/7/2016 vac	100	0
5/8/2016 vac	100	0
5/9/2016 vac	100	0
5/10/2016 vac	100	0
5/11/2016 vac	100	0
5/12/2016 vac	100	0
5/13/2016 vac	100	191

5/14/2016 vac	100	56
5/15/2016 vac	100	175
5/16/2016 vac	100	169
5/17/2016 vac	100	132
5/18/2016 vac	100	175
5/19/2016 vac	100	155
5/20/2016 vac	100	140
5/21/2016 vac	100	0
5/22/2016 vac	100	0
5/23/2016 vac	100	0
5/24/2016 vac	100	0
5/25/2016 vac	100	0
5/26/2016 vac	100	0
5/27/2016 vac	100	191
5/28/2016 vac	100	154
5/29/2016 vac	100	171
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5/31/2016 vac	100	155
6/1/2016 vac	100	162
6/2/2016 vac	100	171
6/3/2016 vac	100	148
6/4/2016 vac	100	133
6/5/2016 vac	100	154
6/6/2016 vac	100	137
6/7/2016 vac	100	155
6/8/2016 vac	100	152
6/9/2016 vac	100	180
6/10/2016 vac	100	171
6/11/2016 vac	100	149
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6/13/2016 vac	100	170
6/14/2016 vac	100	132
6/15/2016 vac	100	155
6/16/2016 vac	100	140
6/17/2016 vac	100	160
6/18/2016 vac	100	0
6/19/2016 vac	100	0
6/20/2016 vac	100	0
6/21/2016 vac	100	132
6/22/2016 vac	100	155
6/23/2016 vac	100	130
6/24/2016 vac	100	145
6/25/2016 vac	100	154
6/26/2016 vac	100	0
6/27/2016 vac	100	0
6/28/2016 vac	100	0
6/29/2016 vac	100	0

6/30/2016 vac	100	170
7/1/2016 vac	100	114
7/2/2016 vac	100	133
7/3/2016 vac	100	77
7/4/2016 vac	100	134
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7/7/2016 vac	100	170
7/8/2016 vac	100	171
7/9/2016 vac	100	175
7/10/2016 vac	100	152
7/11/2016 vac	100	133
7/12/2016 vac	100	171
7/13/2016 vac	100	65
7/14/2016 vac	100	180
7/15/2016 vac	100	191
7/16/2016 vac	100	133
7/17/2016 vac	100	144
7/18/2016 vac	100	155
7/19/2016 vac	100	170
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7/21/2016 vac	100	130
7/22/2016 vac	100	131
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7/24/2016 vac	100	155
7/25/2016 vac	100	132
7/26/2016 vac	100	33
7/27/2016 vac	100	190
7/28/2016 vac	100	171
7/29/2016 vac	100	58
7/30/2016 vac	100	170
7/31/2016 vac	100	113
8/1/2016 vac	100	160
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8/9/2016 vac	100	90
8/10/2016 vac	100	33
8/11/2016 vac	100	170
8/12/2016 vac	100	181
8/13/2016 vac	100	0
8/14/2016 vac	100	0
8/15/2016 vac	100	0

8/16/2016 vac	100	210
8/17/2016 vac	100	170
8/18/2016 vac	100	133
8/19/2016 vac	100	144
8/20/2016 vac	100	155
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9/7/2016 vac	100	155
9/8/2016 vac	100	140
9/9/2016 vac	100	181
9/10/2016 vac	100	156
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9/23/2016 vac	100	175
9/24/2016 vac	100	210
9/25/2016 vac	100	154
9/26/2016 vac	100	138
9/27/2016 vac	100	159
9/28/2016 vac	100	180
9/29/2016 vac	100	174
9/30/2016 vac	100	155
10/1/2016		

10/2/2016  
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10/30/2016  
10/31/2016

Inventory # OS3732000  
NW Sec 12-21N-07E  
Osage County, Oklahoma  
Little Bear  
Well Number F-1

Operator: Becca Oil LLC  
918-225-2334

	Avg PSIG	Max PSIG	Volume Inj
1/1/2016 vac		100	170
1/2/2016 vac		100	155
1/3/2016 vac		100	164
1/4/2016 vac		100	173
1/5/2016 vac		100	165
1/6/2016 vac		100	170
1/7/2016 vac		100	164
1/8/2016 vac		100	170
1/9/2016 vac		100	163
1/10/2016 vac		100	170
1/11/2016 vac		100	165
1/12/2016 vac		100	165
1/13/2016 vac		100	215
1/14/2016 vac		100	133
1/15/2016 vac		100	165
1/16/2016 vac		100	170
1/17/2016 vac		100	175
1/18/2016 vac		100	164
1/19/2016 vac		100	130
1/20/2016 vac		100	155
1/21/2016 vac		100	161
1/22/2016 vac		100	180
1/23/2016 vac		100	154
1/24/2016 vac		100	171
1/25/2016 vac		100	165
1/26/2016 vac		100	170
1/27/2016 vac		100	164
1/28/2016 vac		100	170
1/29/2016 vac		100	179
1/30/2016 vac		100	164
1/31/2016 vac		100	155
2/1/2016 vac		100	160
2/2/2016 vac		100	175
2/3/2016 vac		100	144
2/4/2016 vac		100	155
2/5/2016 vac		100	171
2/6/2016 vac		100	138
2/7/2016 vac		100	154
2/8/2016 vac		100	137
2/9/2016 vac		100	155

2/10/2016 vac	100	130
2/11/2016 vac	100	40
2/12/2016 vac	100	191
2/13/2016 vac	100	155
2/14/2016 vac	100	170
2/15/2016 vac	100	132
2/16/2016 vac	100	154
2/17/2016 vac	100	170
2/18/2016 vac	100	171
2/19/2016 vac	100	33
2/20/2016 vac	100	55
2/21/2016 vac	100	228
2/22/2016 vac	100	214
2/23/2016 vac	100	160
2/24/2016 vac	100	135
2/25/2016 vac	100	154
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3/2/2016 vac	100	210
3/3/2016 vac	100	170
3/4/2016 vac	100	155
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3/8/2016 vac	100	160
3/9/2016 vac	100	171
3/10/2016 vac	100	70
3/11/2016 vac	100	154
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3/28/2016 vac	100	180
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4/2/2016 vac	100	210
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4/9/2016 vac	100	115
4/10/2016 vac	100	210
4/11/2016 vac	100	244
4/12/2016 vac	100	260
4/13/2016 vac	100	155
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4/15/2016 vac	100	164
4/16/2016 vac	100	132
4/17/2016 vac	100	170
4/18/2016 vac	100	165
4/19/2016 vac	100	169
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4/21/2016 vac	100	138
4/22/2016 vac	100	141
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4/24/2016 vac	100	132
4/25/2016 vac	100	171
4/26/2016 vac	100	165
4/27/2016 vac	100	170
4/28/2016 vac	100	144
4/29/2016 vac	100	155
4/30/2016 vac	100	165
5/1/2016 vac	100	163
5/2/2016 vac	100	171
5/3/2016 vac	100	154
5/4/2016 vac	100	165
5/5/2016 vac	100	170
5/6/2016 vac	100	0
5/7/2016 vac	100	0
5/8/2016 vac	100	0
5/9/2016 vac	100	0
5/10/2016 vac	100	0
5/11/2016 vac	100	0
5/12/2016 vac	100	0
5/13/2016 vac	100	191

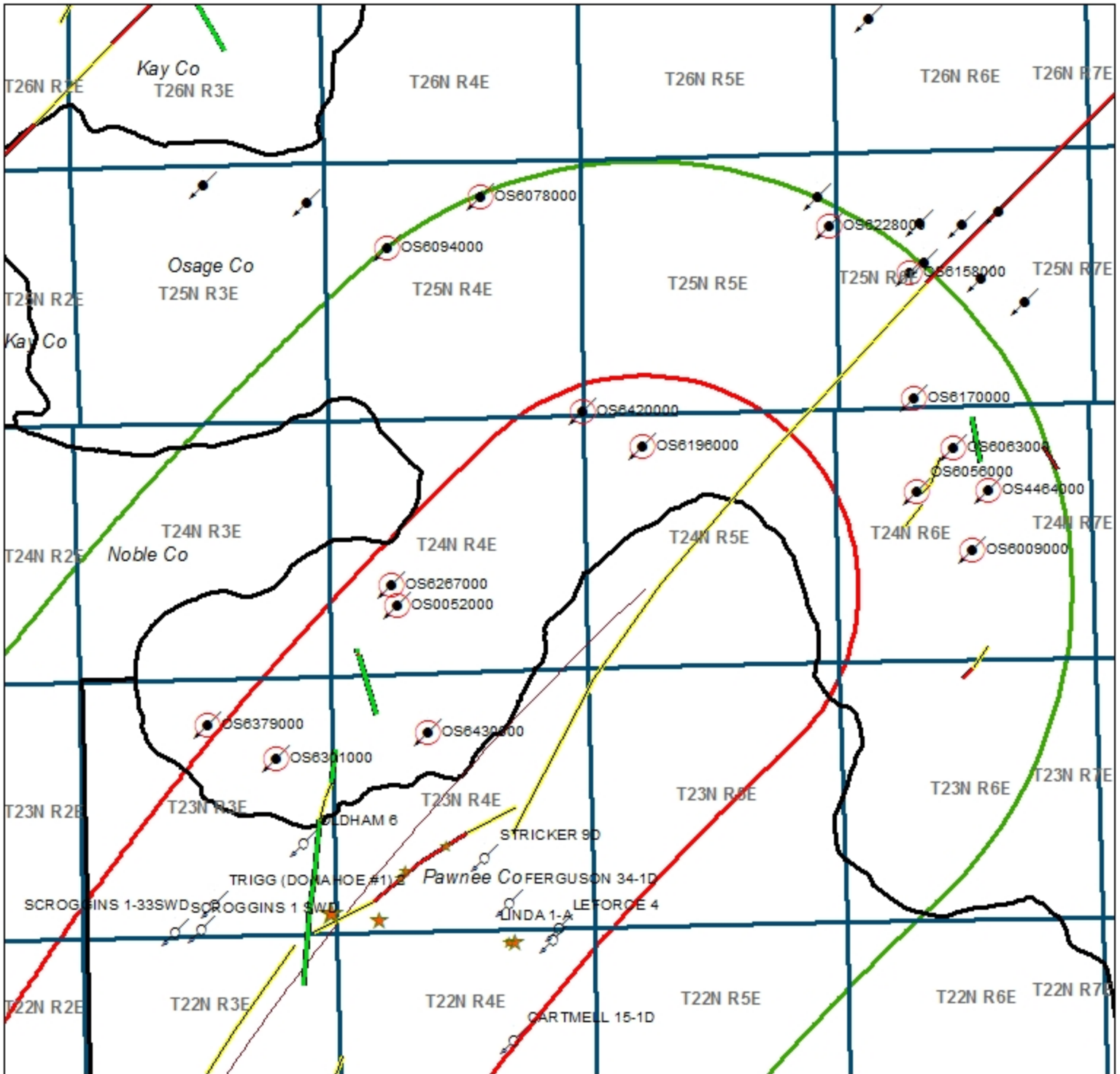
5/14/2016 vac	100	56
5/15/2016 vac	100	175
5/16/2016 vac	100	169
5/17/2016 vac	100	132
5/18/2016 vac	100	175
5/19/2016 vac	100	155
5/20/2016 vac	100	140
5/21/2016 vac	100	0
5/22/2016 vac	100	0
5/23/2016 vac	100	0
5/24/2016 vac	100	0
5/25/2016 vac	100	0
5/26/2016 vac	100	0
5/27/2016 vac	100	191
5/28/2016 vac	100	154
5/29/2016 vac	100	171
5/30/2016 vac	100	132
5/31/2016 vac	100	155
6/1/2016 vac	100	162
6/2/2016 vac	100	171
6/3/2016 vac	100	148
6/4/2016 vac	100	133
6/5/2016 vac	100	154
6/6/2016 vac	100	137
6/7/2016 vac	100	155
6/8/2016 vac	100	152
6/9/2016 vac	100	180
6/10/2016 vac	100	171
6/11/2016 vac	100	149
6/12/2016 vac	100	168
6/13/2016 vac	100	170
6/14/2016 vac	100	132
6/15/2016 vac	100	155
6/16/2016 vac	100	140
6/17/2016 vac	100	160
6/18/2016 vac	100	0
6/19/2016 vac	100	0
6/20/2016 vac	100	0
6/21/2016 vac	100	132
6/22/2016 vac	100	155
6/23/2016 vac	100	130
6/24/2016 vac	100	145
6/25/2016 vac	100	154
6/26/2016 vac	100	0
6/27/2016 vac	100	0
6/28/2016 vac	100	0
6/29/2016 vac	100	0

6/30/2016 vac	100	170
7/1/2016 vac	100	114
7/2/2016 vac	100	133
7/3/2016 vac	100	77
7/4/2016 vac	100	134
7/5/2016 vac	100	156
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7/7/2016 vac	100	170
7/8/2016 vac	100	171
7/9/2016 vac	100	175
7/10/2016 vac	100	152
7/11/2016 vac	100	133
7/12/2016 vac	100	171
7/13/2016 vac	100	65
7/14/2016 vac	100	180
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7/16/2016 vac	100	133
7/17/2016 vac	100	144
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7/29/2016 vac	100	58
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8/9/2016 vac	100	90
8/10/2016 vac	100	33
8/11/2016 vac	100	170
8/12/2016 vac	100	181
8/13/2016 vac	100	0
8/14/2016 vac	100	0
8/15/2016 vac	100	0

8/16/2016 vac	100	210
8/17/2016 vac	100	170
8/18/2016 vac	100	133
8/19/2016 vac	100	144
8/20/2016 vac	100	155
8/21/2016 vac	100	130
8/22/2016 vac	100	171
8/23/2016 vac	100	155
8/24/2016 vac	100	144
8/25/2016 vac	100	138
8/26/2016 vac	100	171
8/27/2016 vac	100	155
8/28/2016 vac	100	180
8/29/2016 vac	100	191
8/30/2016 vac	100	170
8/31/2016 vac	100	164
9/1/2016 vac	100	175
9/2/2016 vac	100	160
9/3/2016 vac	100	140
9/4/2016 vac	100	132
9/5/2016 vac	100	154
9/6/2016 vac	100	138
9/7/2016 vac	100	155
9/8/2016 vac	100	140
9/9/2016 vac	100	181
9/10/2016 vac	100	156
9/11/2016 vac	100	0
9/12/2016 vac	100	0
9/13/2016 vac	100	0
9/14/2016 vac	100	0
9/15/2016 vac	100	0
9/16/2016 vac	100	0
9/17/2016 vac	100	0
9/18/2016 vac	100	0
9/19/2016 vac	100	0
9/20/2016 vac	100	0
9/21/2016 vac	100	0
9/22/2016 vac	100	180
9/23/2016 vac	100	175
9/24/2016 vac	100	210
9/25/2016 vac	100	154
9/26/2016 vac	100	138
9/27/2016 vac	100	159
9/28/2016 vac	100	180
9/29/2016 vac	100	174
9/30/2016 vac	100	155
10/1/2016 vac	100	170

10/2/2016 vac	100	166
10/3/2016 vac	100	158
10/4/2016 vac	100	172
10/5/2016 vac	100	161
10/6/2016 vac	100	170
10/7/2016 vac	100	56
10/8/2016 vac	100	210
10/9/2016 vac	100	201
10/10/2016 vac	100	170
10/11/2016 vac	100	185
10/12/2016 vac	100	144
10/13/2016 vac	100	190
10/14/2016 vac	100	173
10/15/2016 vac	100	144
10/16/2016 vac	100	165
10/17/2016 vac	100	170
10/18/2016 vac	100	180
10/19/2016 vac	100	23
10/20/2016 vac	100	240
10/21/2016 vac	100	0
10/22/2016 vac	100	0
10/23/2016 vac	100	171
10/24/2016 vac	100	165
10/25/2016 vac	100	120
10/26/2016 vac	100	138
10/27/2016 vac	100	158
10/28/2016 vac	100	140
10/29/2016 vac	100	210
10/30/2016 vac	100	171
10/31/2016 vac	100	133

## Pawnee &amp; Osage Co Area wells 06/03/2016



0 0.75 1.5 3 4.5 6 Miles

- Legend:

  - DI\_Arbuckle\_09032016\_UTM14\_10mi
  - DI\_Arbuckle\_09032016\_UTM14
  - Pawnee5.5\_5mileBufferWells09-03-2016
  - Pawnee\_DI
  - Past7days\_09032016
  - ml\_ogs
  - OF4-2015\_WGS84
  - <all other values>
  - Optimal
  - 1
  - 2
  - 3
  - Pawnee10mileLine
  - Pawnee10mileLine10mileBuffer2
  - Pawnee10mileline5mileBuffer



## Oklahoma Geological Survey

Dr. Jeremy Boak, Director

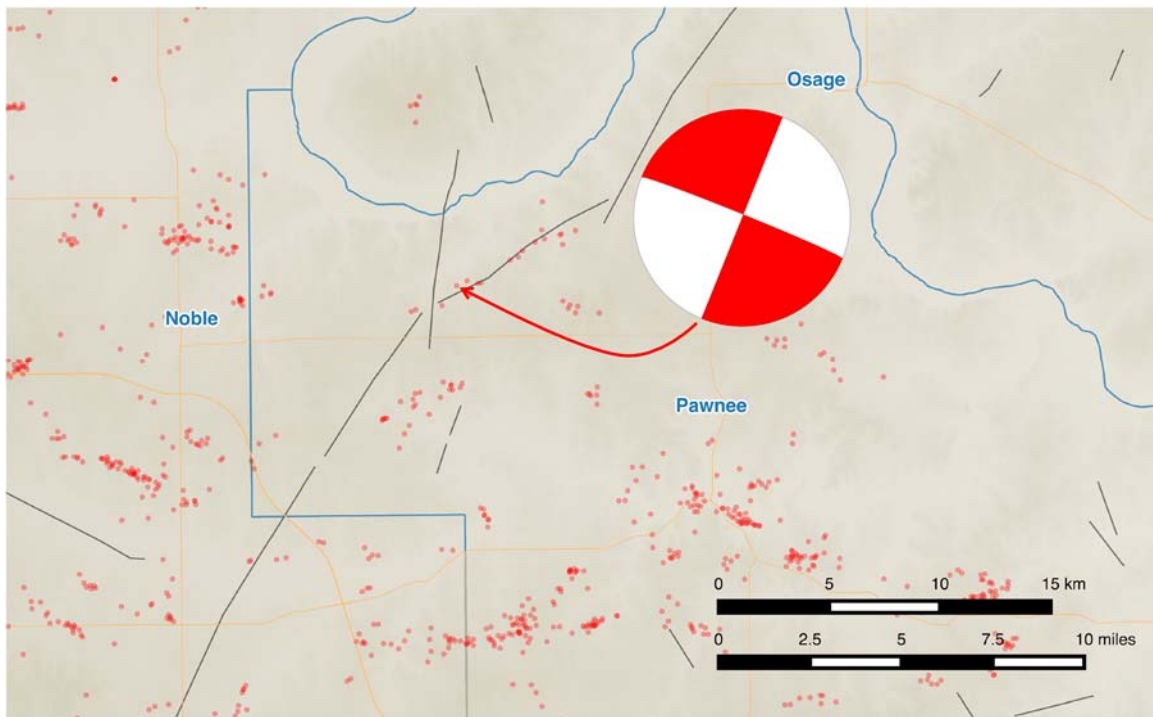
### Pawnee Earthquake Fact Sheet

**Date/Time:** 09/03/2016 7:02 am (CDT)

**Magnitude:** 5.6 M<sub>w</sub> (main shock)

**Location:** 9.3 miles (15 km) NW of Pawnee, Oklahoma

**Depth:** 3.5 miles (5.6 km)



### Preliminary Statement

The M5.6 earthquake this morning was felt across Oklahoma and many neighboring states. This was a strike-slip event that happened on a splay off of the southern end of the Labette Fault. The Oklahoma Geological Survey is coordinating with the USGS, other state agencies, and university researchers to evaluate the situation and mitigate seismic hazards.

### Aftershock Advisory

The magnitude 5.5 earthquake that occurred in Pawnee County has already triggered aftershocks. Aftershocks are earthquakes that occur following a large earthquake, in the same general area as the earthquake, ranging from days to even a few years. The likelihood of an aftershock being larger than this earthquake is about 5%. Aftershocks have the potential to create damage, just like other earthquakes and are a normal occurrence after large earthquakes. They may be expected to continue and become less frequent with time. If you have observed damage to your residence or workplace, please note that further damage from aftershocks is possible.

### Oklahoma Earthquakes

Nearly every county in Oklahoma has had an earthquake located within its boundaries. Earthquakes within the central United States can be felt by a significant percentage of the population over a widespread area, with the felt area being more than ten times larger than a similar earthquake on the West Coast. Moreover, damage may occur at greater distances from the epicenter. We encourage residents to report experiences to the USGS Did You Feel It? website: <http://earthquake.usgs.gov/data/dyfi/>

In the event of another earthquake or aftershocks, use the following protective protocol:



- Drop to the ground
- Cover your head and neck
- Hold on to any sturdy covering

## Future Updates



**OGS website:** [ogs.ou.edu](http://ogs.ou.edu)



**Twitter:** [@OKearthquakes](https://twitter.com/OKearthquakes)



**Facebook:** [Oklahoma Geological Survey – Earthquake Notices](https://www.facebook.com/OKearthquakes)

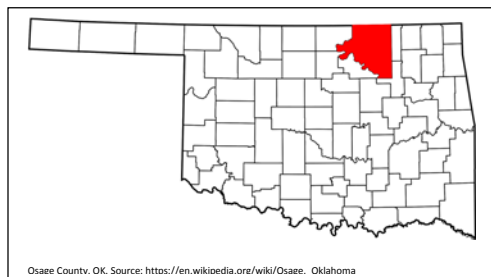
### Monthly Pressures and Volumes

<a href="#">\\ODCMSAPSC101s\Corporate Structure\USA\Entities\Stillwater\Salt Water Disposal\</a>	End	
1/1/2016	9/7/2016	
<a href="#">\\ODCMSAPSC101S\Corporate Structure\USA\Entities\Stillwater\Salt Water Disposal\RICE 2A-9 SWD</a>		
<b>API Number</b>	351134475300	
<b>TOW Completion Name</b>	RICE 2A-9 SWD	
<b>Date</b>	<b>Average Pressure</b>	<b>Total Injection Volume</b>
January 2016	8	64142
February 2016	-3	42067
March 2016	-3	63995
April 2016	31	81030
May 2016	-3	43134
June 2016	-3	40807
July 2016	-2	27158
August 2016	-3	25880
September 2016 (9/1 thru 9/7)	-6	2465

<a href="#">\\ODCMSAPSC101s\Corporate Structure\USA\Entities\Stillwater\Salt Water Disposal\</a>	End	
1/1/2016	9/7/2016	
<a href="#">\\ODCMSAPSC101S\Corporate Structure\USA\Entities\Stillwater\Salt Water Disposal\SOUTH BEND 2A-11 SWD</a>		
<b>API Number</b>	351134431200	
<b>TOW Completion Name</b>	SOUTH BEND 2A-11 SWD	
<b>Date</b>	<b>Average Pressure</b>	<b>Total Injection Volume</b>
January 2016	320	59640
February 2016	209	39221
March 2016	319	59796
April 2016	218	39548
May 2016	282	49883
June 2016	324	50693
July 2016	252	35221
August 2016	209	35178
September 2016 (9/1 thru 9/7)	47	2813

## Osage Mineral Reserve

Osage County It is the largest county in Oklahoma by area with a total area of 2,304 square miles. Osage Nation owns all of the subsurface mineral rights located within Osage County. The Osage Tribe retained all mineral rights when surface lands were allotted in 1906 (Osage Allotment Act of 1906, 34 Stat. 539). Today, private citizens hold approximately 90% of the surface ownership in Osage County and the Osage Nation and Osage Tribal members hold the remaining surface ownership.



Osage County, OK. Source: [https://en.wikipedia.org/wiki/Osage\\_County,\\_Oklahoma](https://en.wikipedia.org/wiki/Osage_County,_Oklahoma)

The Osage Nation Tribal Council is located in Pawhuska, Oklahoma. The Osage Minerals Council is vested by the Osage Nation Constitution to develop and administer the Osage Mineral Estate. The Bureau of Indians Affairs (BIA)

under delegation from the Secretary of the Interior, is responsible for administering the development of oil and gas resources in Osage County for the benefit of the Osage Nation. Leases are subject to the consent of the Osage Minerals Council and approval of the BIA Superintendent. The Osage Nation Environmental and Natural Resources Department within the Osage National Tribal Council works closely with EPA to operate the Underground Injection Program encompassing both enhanced recovery and disposal operations.

EPA Region 6 is charged with the direct implementation of UIC regulations, in the Osage Mineral Reserve. The Ground Water/UIC Section in the Water Division is responsible for preparing the permits required to legally conduct those underground injection operations. The Compliance Assurance and Enforcement Division operates a strong enforcement program working closely with the Nation's environmental program to inspect and observe actions such as pluggings and mechanical integrity tests.

The table below includes all open injection well records from Osage County in our in-house database. They are divided into wells injecting into the Arbuckle formation (including wells that are injecting into the basement (characterized as granite) in our database) and all other Class II injection wells in Osage County. The wells are further classified by well type and authorization type. Well type is used to further clarify the purpose of the injection well. Many wells in Osage County are classified as enhanced recovery wells. These wells inject fluid and/or gas into the formation to boost oil and gas production in nearby production wells. This is a continuous cycle where much of the injected fluids are recovered and reinjected. Wells classified as disposal wells are permanently disposing of the fluids into the receiving formation. The table also separates the wells into permitted or authorized by rule (ABR). Wells that were in existence prior to regulations requiring permits may be authorized by the rule. These wells have undergone technical review but have not gone through the permitting process.

Class II Injection Wells in Osage County, OK	Well Type		Permitted	Authorized by Rule	Class II (Total)
	Receiving Formation	Disposal	Enhanced Recovery		
Arbuckle and Basement	290	19	190	119	309
All Others (Active)	833	1417	876	1375	2250

